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ABSTRACT

Sex segregation is a powerful phenomenon in childhood. It occurs universally whenever children have a choice of playmates and is found in sub-human primates too. Adults are not directly responsible for sex segregation. Data do not support the hypothesis that the most ladylike girls and the most rough and active boys first form the segregated play groups that emerge in nursery school. Modest evidence indicates that participation in all-girl play groups serves a positive socializing function for girls. For boys, no such evidence was found. Recent findings contribute to the growing body of evidence that the cultures developed by boys and girls in their segregated groups are distinctive and serve different functions. Altogether, these findings and results of primate studies suggest that females are first to initiate segregation to avoid being dominated by males. These conjectures, however, do not explain why boys avoid playing with girls. It is concluded that gender segregation appears to be relatively intractable; it may be unwise for adults to try to prevent boys and girls from choosing same-sex playmates in unstructured play situations. Adults can play a very large role, though, in setting up structured situations in which cross-sex interactions can occur without placing on children the burden of letting their peers see that they have chosen a cross-sex partner. (RH)

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Gender Segregation in Nursery School: Predictors and Outcomes

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There is now plentiful empirical confirmation for the widespread occurrence of gender segregation in childhood. Over a period of 50 years, from Parten's (Parten, 1933) report in the 30's to the present time, studies have reported that during free play periods, preschoolers and grade-school children interact with children of the same sex more often than they do with opposite-sex children. There is reason to believe that the degree of segregation becomes greater in the grade school years than it was in preschool. In our longitudinal study of approximately 100 children observed both in nursery school and the first grade, we found that the degree of sex segregation had doubled in the two-year period between our observations.

Figures 1 & 2 here

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Lockheed and Klein (1985) report that in grade school classrooms, the rate of same-sex interaction is considerably higher than cross-sex interaction, but that the degree of segregation is not so great in teacher-supervised situations as it is in situations where children have more choice of activities and partners, as in most playground situations. In other words, in the presence of adults, or in situations where adults have

structured the activities, children do not segregate themselves as greatly as they do when the choice of activities and partners is more unconstrained. We conclude from this that direct adult pressure is not the primary factor producing segregation by the time the children have reached school age. Children apply their own pressures, teasing one another for crossing gender lines, and monitoring one another's adherence to the gender norms. An interesting illustration of this fact comes from the recent work of John Gottman (Gottman, in press) who wanted to study same-sex and cross-sex friendships at two ages: preschool and the early grade-school ages. After the age of 6, he was able to locate almost no pairs of close cross-sex friends. A research assistant spent a month searching, including going door to door and asking parents, and finally located five pairs of cross-sex friends who were over six years of age. He learned, however, that all of these friendships were of long standing -- the children had known each other since the age of three. Furthermore, the friendships had gone underground. That is, the children did not acknowledge their friendship when they encountered each other at school, but played together in secret in the privacy of their own homes after school. As we know from Damons's reports (Damon, 1977) children's segregation between the ages of 6 and 8 is backed up by an ideology which makes conformity to gender rules a kind of moral imperative.

How early does the tendency toward preference for same-sex playmates begin? In our 1978 study, we found a strong tendency for 33-month olders to play more actively with a same-sex partner than with an opposite-sex partner, when they were paired with an unfamiliar child of the same age as themselves. A recent report by La Freniere and

colleagues (1984) involved observations of 200 children ranging in age from 1 to 6 years, enrolled in a day care center. They recorded affiliative behaviors of individual children, and noted the gender of the target toward whom these behaviors were directed. At the age of 18 months, there was no tendency for the children to discriminate by gender in choosing targets for their smiles, approaches, affectionate touches or social vocalizing. By 28 months, the girls were directing 2/3 of their behaviors to other girls, while the boys were still showing no preference. The boys did increase steadily in their same-sex preference from that age on, however, so that by the age of 5 1/2, boys were directing 3/4 of their overtures to other boys, and were more sex-typed than girls in this respect. There is some indication, then, that girls are the first to start the segregation, but that boys soon come to do their share of engineering the segregation.

How easy is it to change these sex-typed partner choices? Most of you are no doubt familiar with the study by Serbin and colleagues (Serbin, Tonick & Sternglanz, 1977), in which nursery school teachers mounted a behavior modification program, reinforcing children for cross-sex play over a period of two weeks. They got a nice Skinnerian acquisition curve, but found that when the reinforcement schedule was discontinued, the children returned immediately to their same-sex partner choices. Lockheed (personal communication) has worked with grade-school teachers to form mixed-sex work groups which met several times a week over a period of a year. There was some increase during the year in the rate of cross-sex interaction that occurred at other times than the work-group sessions. The attitudinal data, however, told a different story. At the beginning of the year, both boys and girls said that they would

prefer to work with same-sex other children if they had a free choice of partners for a work group. By the end of the year's experience working in mixed-sex groups the boys had not changed: they still preferred other boys as partners. The girls *had* changed: they were now *less* willing to work with boys than they had been at the beginning of the year!

To summarize so far: sex segregation is a powerful phenomenon in childhood. To my knowledge, it occurs universally whenever children have a choice of playmates; parenthetically we would add that it is found in sub-human primates too. We would suggest, too, that sex differences on a variety of dimensions are more pronounced when children are functioning in groups than they are when children are acting individually. Sex-segregation is a robust phenomenon, in that it is resistant to change through adult efforts to engineer opportunities for cross-sex contact. It is our hypothesis that adults are not directly responsible for it.

However of course, they may be *indirectly* responsible for it. A popular view among many of us would be that children have acquired sex-typed play preferences and interaction styles through their socialization experiences within the family, before they move out into the peer group. If girls have been given dolls and tea sets and encouraged to help mother in the kitchen and to like pretty clothes, it would not be surprising if, when they entered nursery school, they would gravitate toward the doll corner or the play kitchen, or to the box of dress-up clothes; there they would encounter other girls with similar interests and their playmate choices would be shaped accordingly. In a similar vein, if boys have learned to like rough play because their

fathers have tossed them in the air and played mock football with them from an early age, one would expect that they would seek out playmates who liked the same kind of play -- primarily, other boys. In other words, early socialization would have created same-sex compatibilities in play styles and activity preferences, and this would bring same-sex children together when children are making spontaneous choices of playmates. One could expand on this hypothesis in the following way: the children who are already the most sex-typed by the time they enter a group setting should be the ones who will be the first to show same-sex playmate choice; that is, it will be the lady-like girls and the rough and active boys who will start the segregation process; these children will establish the pattern of interaction within the segregated groups, so that when the more androgynous children are recruited to these groups as the children grow older, the new recruits will have to adapt to the sex-typed group cultures already established by the most sex-typed children.

Our longitudinal study provides some limited opportunities to examine some of these hypotheses. For one of our cohorts, we sent observers to the children's homes when they were 45 months of age. A majority of the children were enrolled in some form of group care for at least a few hours a week at this age, but the children were seen only at home. During the following year, however, those who were enrolled in nursery school were observed at their schools, at which time the degree of sex-typing of their playmate choices was scored. There were only 17 girls and 24 boys for whom data are available at both 45 months and the following year in nursery school, so the predictive correlations we will report should be regarded as exploratory.

At the 45-month home session, we observed the children in one play session with their mothers, and in another session with their fathers, and noted what kinds of toy choices and play themes were initiated by the children. We interviewed each parent about the child's play styles and activity preferences. We also gave the children a standard type of sex-typing measure, involving a choice of dolls (ranging from the Incredible Hulk to a bride doll) and a choice of headgear (ranging from football helmet to bridal veil). From these data sources we derived a number of measures of sex-typing. These measures did not always cluster together in expected ways -- for example, we found that the girls who liked frilly dresses, were interested in how their hair looked, and were described by their parents as flirtatious, were more likely than other girls to be rough and noisy in their play. But the fact of greatest interest is that sex-typing at age 45 months does not predict significantly (not even marginally) to the choice of same-sex playmates in nursery school. That is, neither the toy-hat preference test, nor the masculinity or femininity of the child's toy and activity choices when playing with parents, is correlated with subsequent same-sex play. There is a tendency (of borderline significance) for the children who are rowdy at age 45 months also tended to select girls playmates a year later, so there is some cross-age consistency. At the same time, it was the girls who preferred masculine fantasy roles -- who liked to play at being cowboys, spacemen, monsters or policemen -- who were significantly more likely to choose girls rather than boys to play with in nursery school. This is consistent with the connection between rowdyism and same-sex play in girls, and runs counter to the hypothesis that it is the more ladylike girls who initiate same-sex play.

There were other measures taken at 45 months, other than those focused on sex-typing. Some of these reflected the quality of interaction between the child and the parents. We devised a score reflecting the degree of reciprocity in play; this score was based on the frequency with which one partner -- either parent or child -- made an influence attempt (demand, suggest) to which the partner complied. For boys, it was the boys with the lowest reciprocity scores who were most likely to select other boys as playmates in nursery school. We have one other item of information that is consistent with this finding: at nursery school age, we observed our target children interacting in our mobile lab with two same-sex playmates. We scored the interactions for the level of mutual compliance, as well as for the amount of rough-and-tumble play. We found that boys who engaged in the roughest play showed the lowest levels of mutual compliance; and rough play, as you might expect, was associated with choosing same-sex playmates for boys. Thus, there are certain kinds of interactions that draw boys together and that appear not to depend on the skills that are involved in maintaining an interaction through mutual influence.

It is worth noting that for children of both sexes, it was the children who were already enrolled in group care of some sort at 45 months who were most likely to select same-sex playmates a year later. In other words sheer experience playing in group settings seems to foster segregation.

We have information on certain of the individual characteristics of the children and their parents during the first three years, and for these measures, we have a larger

number of cases. On the whole, there was very little prediction from these early characteristics to the children's preference for same-sex playmates in nursery school. For boys, no trends could be discerned. For girls, there were a few suggestive relationships, all of them counter-intuitive. Thus, at a borderline level of significance, it was the girls with the highest activity levels in the first three years who were more likely to play mainly with girls in nursery school. At age 33 months we observed our subjects in a session in which they were subject to mild frustration. One part of the procedure involved having a puppet tease the children -- offer a toy to lure the child closer, and then snatch it away. In the same session, we watched to see how a child would deal with the task of trying to get an attractive toy out of a transparent plastic box that was difficult to open. From these observations we devised a score called "confront frustration"; children with high scores on this scale were the ones who did not retreat or give up under frustration, but persisted and held their ground. We have a trend level positive correlation, for girls, between being a confronter and choosing girl playmates at a later time. Finally, we examined the hypothesis that early rough-and-tumble play with fathers would predict the choice of male playmates. We found no relationship for boys, but the girls whose fathers had played the most roughly with them at the age of 12 and 18 months turned out to be the girls who most preferred to play with other girls when they entered nursery school.

Figure 3 here

To summarize: the hypothesis that it is the most ladylike girls and the most boyish boys who first form the segregated play groups that emerge in nursery school receives no support from our data. On the contrary, there is some evidence that it is the more feisty girls who choose to play with other girls.

The next question we have asked is: given that a child does play in same-sex groups in nursery school, does this make any difference in the characteristics the child displays two years later, at the age of six? At six, we obtained a variety of information about our subjects, including the teacher's report of the child's orientation to school work, parent interviews, Q sorts by mother, father and teacher, and observations of the children in the classroom and on the playground. From a factor analysis of the Q-sort items, we obtained a measure called "prosocial", which had positive loadings on the child's being cooperative with teachers, popular with peers, helpful, sympathetic, self-controlled and reasonable in interaction with others; and negative loadings on being aggressive, being a show-off, being impatient and impulsive, and being rebellious and stubborn. For girls, having been involved in an all-girl playgroup in nursery school is associated with having higher scores on the Q-sort prosocial composite two years later. The correlation was marginal for all girls taken together, but for those girls who were above the median in social interaction, the correlation was strong. Nursery-school experience in an all-girl playgroup also predicts girls settling down well to their school tasks, according to the teacher reports.

Figure 4 here

In our observation of first-grade groups, the girls who had previously played in all-girl groups were the most socially interactive, while the opposite was true for boys. For them, earlier experience in an all-boy playgroup did not appear to foster sociability, and indeed, may have dampened it. These correlations are relatively robust, in the sense that we cannot shake them by partialling out a variety of factors which might be thought to interact with them; indeed, the correlations are sometimes enhanced by such partialling. For example, we noted above that it tends to be the rather feisty girls who form the all-girl play groups in nursery school; but this feistiness does not contribute to later prosociality. Indeed, when we partial out the child's level of non-compliance to parents at nursery school age -- as revealed through parent reports -- participation in a same-sex play group becomes even more strongly associated with a girl's orientation to her school work in the first grade.

To summarize these predictions: we have some modest evidence that participation in all-girl play groups serves a positive socializing function for girls. We have no such evidence for boys. Our findings contribute to the growing body of evidence that the cultures developed by boys and girls in their segregated groups are distinctive, and serve different functions. It becomes increasingly important for us to understand why the segregation comes about in the first place, and why the two cultures develop the characteristics they do. We made an effort to develop an

explanation of early segregation, based on widely accepted views about the origins of sex-typing. Our effort failed. We now want to suggest an alternative approach.

We want to suggest that the initial impetus for segregation stems from dominance relations between the sexes. We were initially alerted to this aspect of interaction in our study of 33-month old unacquainted pairs. We noted that when one child issued a vocal prohibition to the partner, in most cases the partner would desist and back away from the undesired activity. Thus when a boy was attempting to take a toy from a boy partner and the holder of the toy said "No!" or "Stop", the partner would generally desist. The same was true between girl partners. When a girl issued a vocal prohibition to a male partner, however, it did not appear to influence his behavior. Some recent work by Serbin and colleagues (Serbin, Prafkin, Elman & Doyle, 1984) illustrates the same point. They note that between the ages of 3 1/2 and 5 there is an increase in the number of attempts children make to influence their play partners' behavior. Among girls, the increase takes the form of higher rates of polite suggestions; for boys, the increase is in direct demands. Furthermore, over this age range, boys are becoming less and less responsive to polite suggestions, and hence less responsive to the kind of influence attempts increasingly made by girls. These observations help us to understand the findings reported by Charlesworth and LaFreniere (1983). They brought mixed groups of preschool children -- two boys and two girls in each group -- into a playroom equipped with a movie viewer. In order to view the movie, one child had to stand in the viewing position while two other children cooperated -- one by pressing a switch which lit up the screen, another by turning a crank that activated the video

sequences. This was, then, an experiment in the ability of preschool-aged children to cooperate with one another. We should note that the overall level of cooperation was not very high. But for our present purposes, the interesting fact is that boys spent three times as much time in the viewing position, as did girls while the sexes were equal in the degree to which they played the helper roles. There is reason to believe, then, that when boys and girls find themselves in a position where they are competing for a scarce resource, the boys are likely to win out.

How early does this begin? We have little information about the interaction of mixed pairs of very young children. Some suggestive evidence comes from some observations by DeBoer (1984) of 10 pairs of mixed-sex twins and three sets of mixed-sex triplets. The children in this study were between the ages of 9 and 12 months, and the findings are that boy and girl infants were equally likely to start reaching for a sibling's toy, but the girls were more likely to inhibit the reach before actually grabbing the toy. Furthermore, when a boy saw that his sister was reaching for a toy he held, he would sit where he was and hang on to the toy; a girl in this situation, however, would quickly move away, trying to take the toy out of her brother's reach.

Some observations by David Goldfoot (1984) of the interactions of young rhesus monkeys may shed some light on the problem encountered by young females as a result of male dominance. The young animals in Goldfoot's study normally live in a large enclosure similar to their natural habitat. He selected mixed pairs of young monkeys and put them into a fairly small cage with a single desirable tidbit of food or a single attractive toy; he reports that the male would almost invariably get the object. When

he put an adult into the cage with the infants, however, the young female began to get a more equal share of the food and toys. This observation suggests to use reason why preschool girls are more often found near the teachers: proximity to an adult protects them to some degree from dominance by their male peers. The other solution available to girls is to play with other girls and avoid the boys. We suggest that we may have identified a reason why it is the girls who are the first to initiate segregation. Furthermore, it begins to make sense, if one thinks in terms of dominance, that it would be the most active, assertive girls who would least like to be dominated by boys and therefore most likely to select girl playmates. If there is any truth to these hypotheses, however, they constitute only a partial explanation of segregation. We have an explanation of girls' avoidance of playing with boys, but dominance relations do not help us to explain why boys should avoid playing with girls. Like all other aspects of behavioral development, gender segregation undoubtedly has multiple causes, and our hypothesis deals with only one of them.

In closing, let us say what we think some of the implications of these findings and ideas are. Gender segregation appears to be relatively intractable. We are not going to have much success if we try to prevent boys and girls from choosing same-sex playmates in unstructured play situations. In fact, we're not sure that we ought to try. Adults can play a very large role, however, in setting up structured situations where cross-sex interactions can occur without placing on children the burden of letting their peers see that they have chosen a cross-sex partner. Cultures differ enormously in the number of opportunities for non-sexual interaction that occur in the course of daily life, and here

is where we think our choices lie. Our own preference is for maximizing the opportunities in childhood, so that when children reach the age for dating and mating, they have the background of experiences that will permit cross-sex pairs to become friends as well as lovers.

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Figure 1. Choice of same-sex playmates in nursery school and first grade

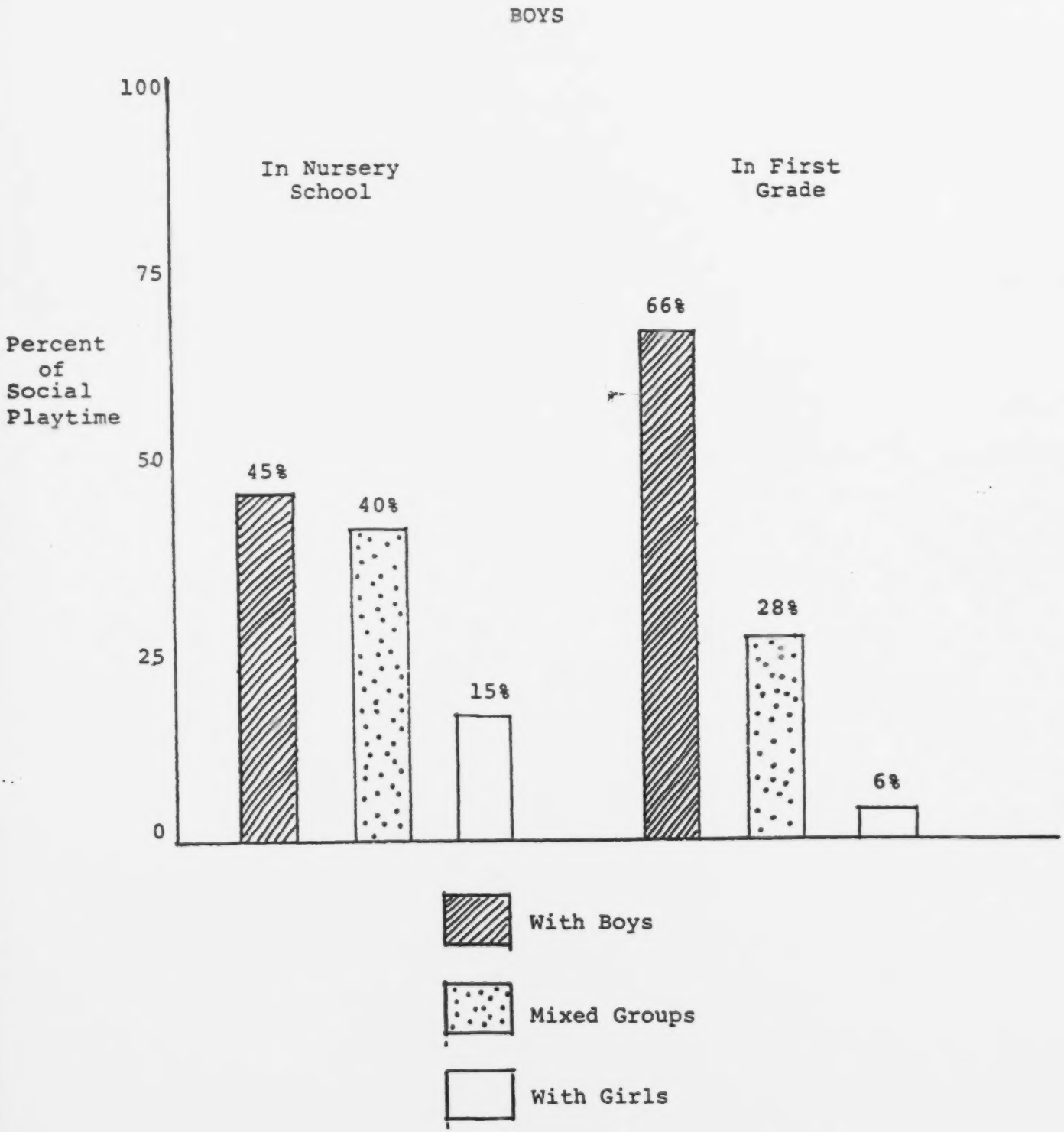


Figure 2. Choice of same-sex playmates in nursery school and first grade

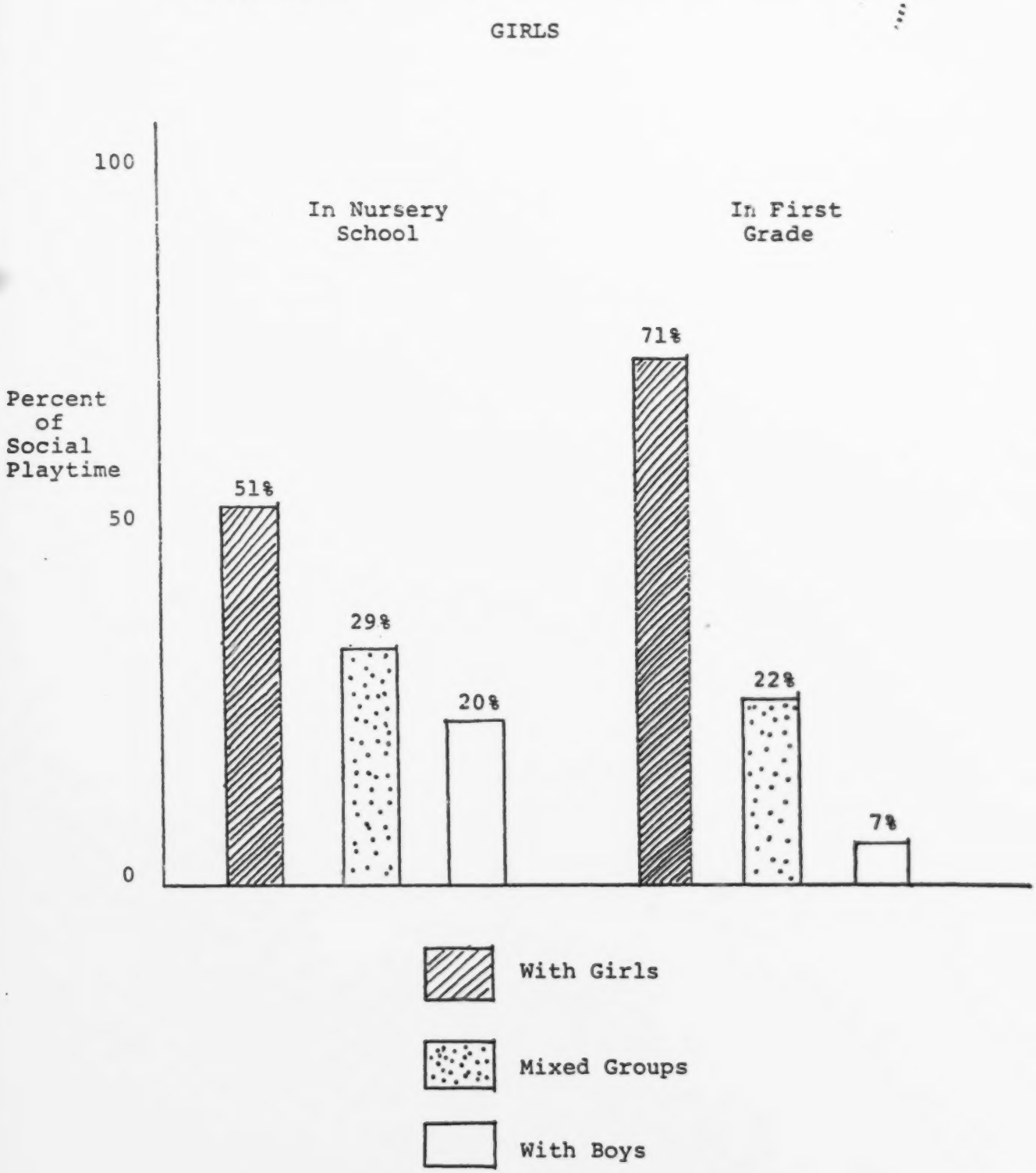
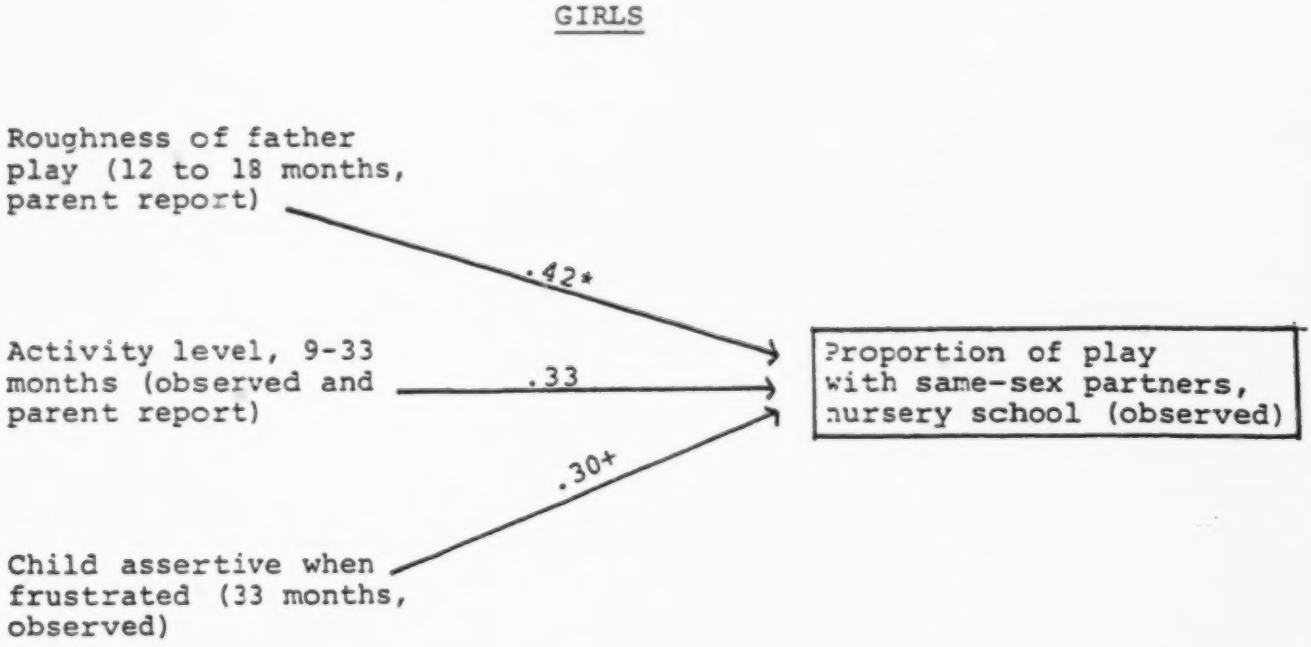


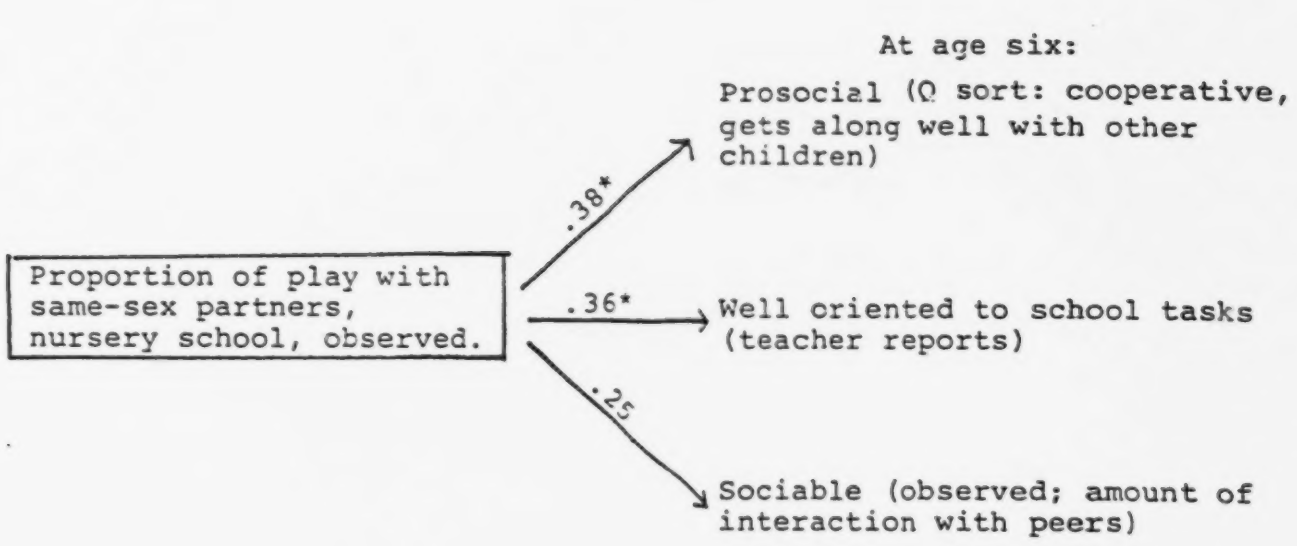
Figure 3: Early-childhood predictors of choosing same-sex playmates in nursery school


GIRLS
Roughness of father play (12 to 18 months, parent report)
.42*
Activity level, 9-33 months (observed and parent report)
.33
Proportion of play with same-sex partners, nursery school (observed)
.30+
Child assertive when frustrated (33 months, observed)

* p = <.05

r p = <.10

Figure 4: Age-six characteristics of children who choose same-sex playmates in nursery school


GIRLS
At age six:
Prosocial (Q sort: cooperative, gets along well with other children)
.38*
Proportion of play with same-sex partners, nursery school, observed.
.36*
Well oriented to school tasks (teacher reports)
.25
Sociable (observed; amount of interaction with peers)

* p = <.05